intact
approaches vulva

stops at vulva

inserts spicules and transfers sperm

hook ablated
approaches vulva

passes vulva

circles hermaphrodite

initiates a slow search for the vulva
using the p.c.s. and spicules (t=300s)

lov-1(sy552)
approaches vulva

passes vulva

circles hermaphrodite

stops at vulva

inserts spicules and transfers sperm

FIG. 1

lov-1 (sy552) rescue data

0.1 map
unit

Rescue

lov-1 (sy552)

lov-1

let-268 daf-19   mec-15

unc-4

genetic map

mnDf66, mnDf29, mnDf57, mnDf63   –

eDf21   +

mnDf21   –

physical map

cosmids:

C18D1   – (0/2)

ZK945   + (4/5)

F27E5   – (0/3)

ZK945.9   ZK945.10

H   H   + (6/8)

plov-1.1   A   – (0/3)

plov-1.2   B   H   – (0/2)

GFP

plov-1::GFP1   GFP   – (0/2)

plov-1.3   Stul
(premature stop)

FIG. 2A

LOV-1 structural features and sequence homologies

LOV-1

PKD1

PKD2

PKDL

Y73F8A.B+A (913aa)

Ser/Thr-rich | Gly rich | * | 1 | 2

26% (269) 20% (668)
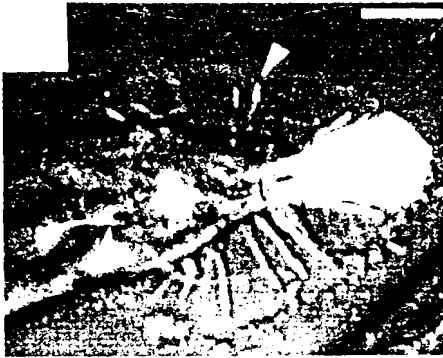1 | 2

20% (558)
2

21% (586)
2

26% (352)
2

coiled-coil
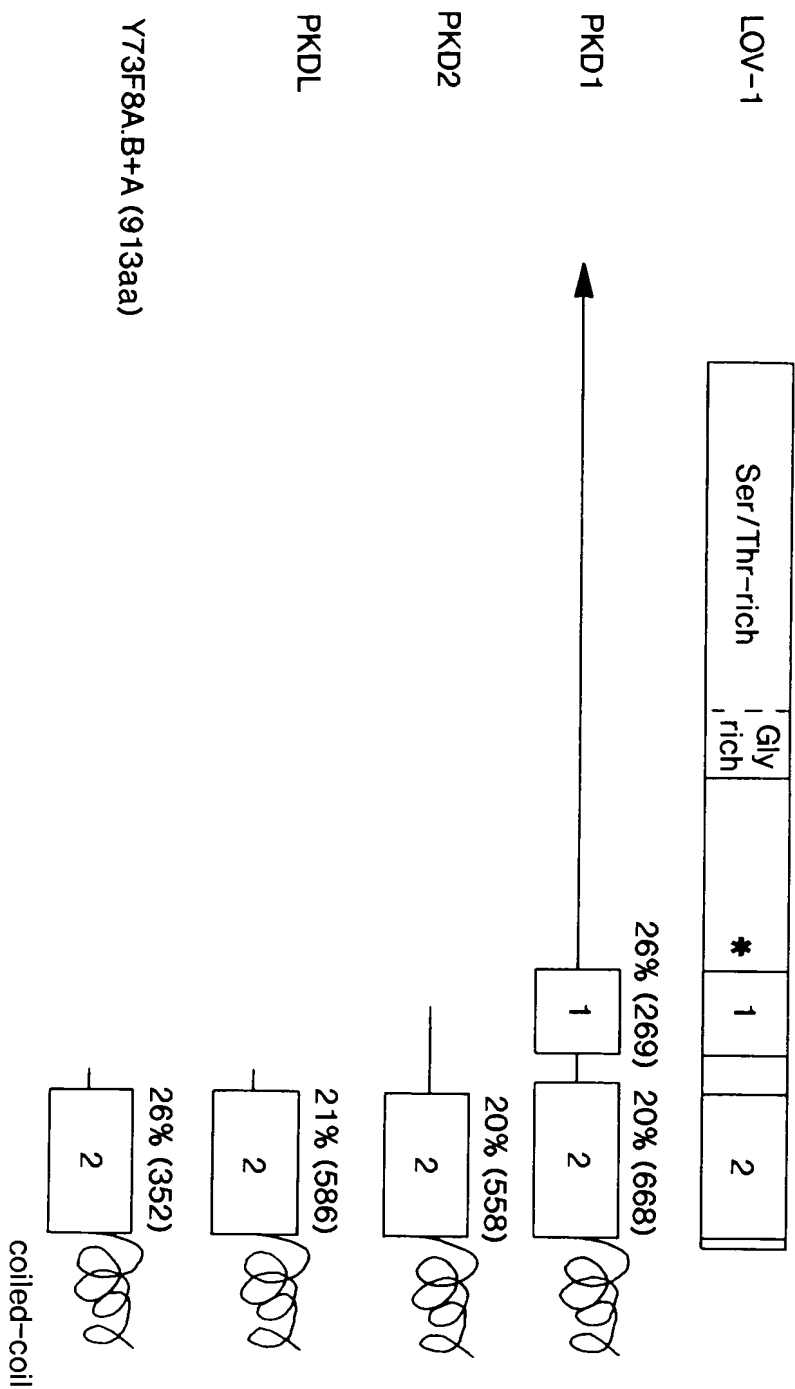
FIG. 2D
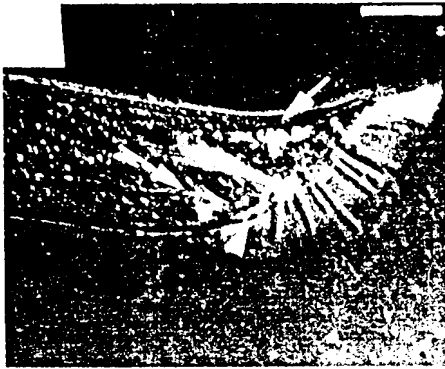
FIG. 4A

FIG. 4D

FIG. 4B
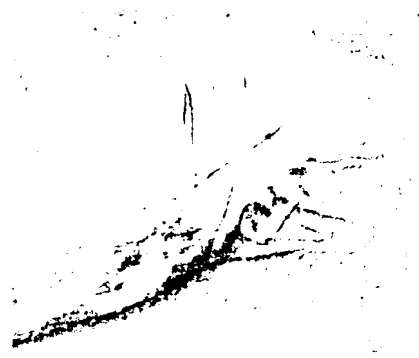
FIG. 4E

FIG. 4C

FIG. 4F

FIG. 3B

FIG. 3A
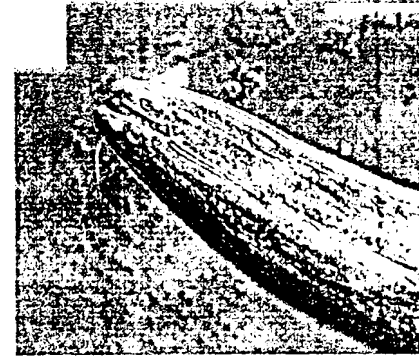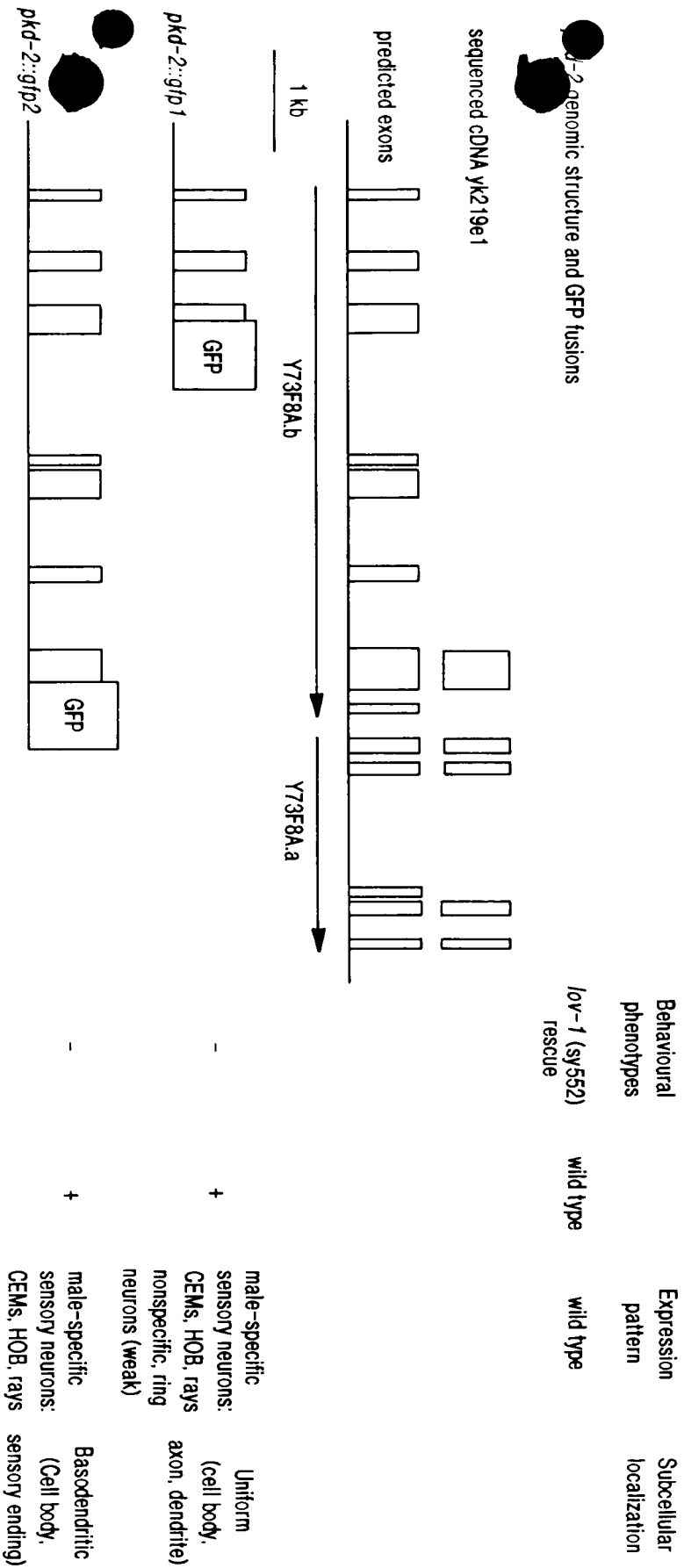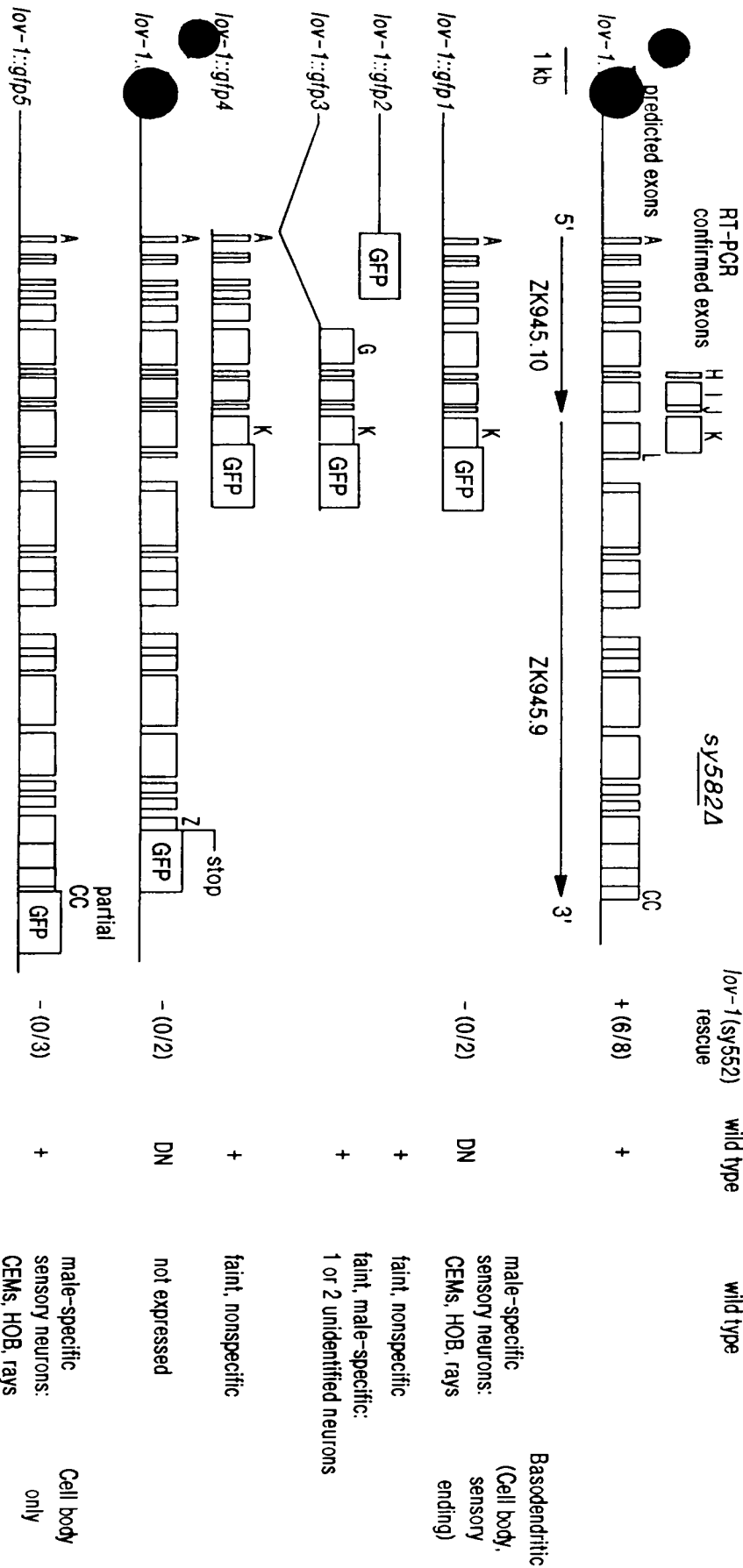
lov-1 gene structure: 16.7 kb rescuing clone

RT-PCR confirmed exons

predicted exons

1 kb

5' ZK945.10 ZK945.9 3'

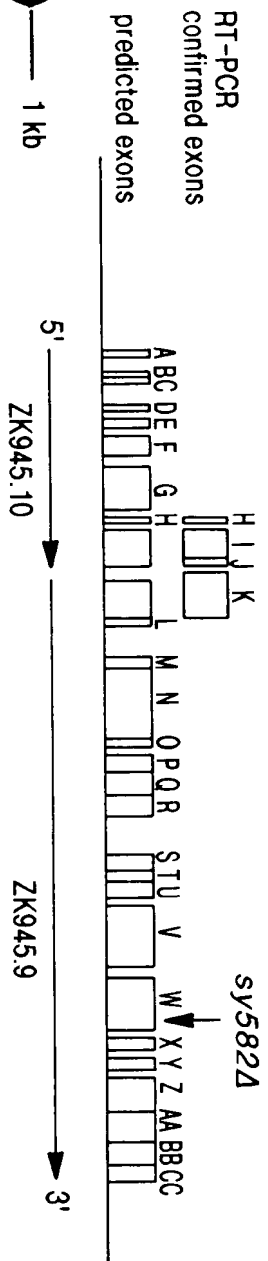A BC DE F G H   H I J K   L   M N O P Q R   S T U   V   W X Y Z AA BB CC

sy582Δ

FIG. 2B

Schematic of GFP fusion constructs and expression data

plov-1::GFP1

plov-1::GFP2

plov-1::GFP3

plov-1::GFP4

plov-1.3

A · G · K · GFP · Z · stop

EXPRESSION PATTERN

strong, male specific sensory neurons: CEMs, rays, HOB

faint, non-sex specific

faint, male specific: one or two unidentified neuron(s)

faint, non-sex specific

DOMINANT NEGATIVE

Yes

No

No

No

Yes

FIG. 2C